

Message Text

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FM SECSTATE WASHDC
TO AMEMBASSY COPENHAGEN

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E.O. 11652: N/A

TAGS: MARR, DA, GL

SUBJECT: SCIENTIFIC PROJECTS IN GREENLAND: BALLOON FLIGHTS

REF: A) STATE 073709, B) COPENHAGEN 1074

1. THE NATIONAL SCIENCE FOUNDATION AND THE OFFICE OF NAVAL RESEARCH ARE SPONSORING A SERIES OF BALLOON FLIGHTS IN SUPPORT OF THE STUDY OF ENERGETIC PARTICLE PRECIPITATION IN THE POLAR REGIONS. THESE STUDIES WILL HELP TO UNDERSTAND THE MECHANISMS OF MAGNETIC STORMS IN THE MAGNETOTAIL, WHICH HAVE A BEARING UPON IONOSPHERIC ABSORPTION OF COSMIC RADIO NOISE AND PROBLEMS OF LONG DISTANCE RADIO COMMUNICATIONS. ONE SUCH SERIES OF FLIGHTS WAS CONDUCTED AT SONDRE STROMFJORD, GREENLAND, DURING AUGUST AND SEPTEMBER OF 1975. EXCELLENT RESULTS WERE
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OBTAINED.

2. ANOTHER SERIES OF FLIGHTS IS PLANNED FOR THE SAME LOCATION DURING THE PERIOD 15 JUNE THROUGH 31 JULY 1976. TWELVE FLIGHTS ARE PLANNED. SCIENTIFIC PAYLOADS WEIGHING APPROXIMATELY 14 KILOGRAMS EACH, WILL BE LAUNCHED ON BALLOONS HAVING VOLUMES OF 7000 CUBIC METERS. THE EXACT DATES FOR EACH LAUNCH WILL BE DETERMINED BY PREVAILING ATMOSPHERIC AND GEOPHYSICAL CONDITIONS.

LAUNCHES WILL BE MADE BY SCIENTIFIC PERSONNEL FROM THE UNIVERSITIES OF DENVER AND CALIFORNIA, UNDER THE DIRECTION OF DR. JAMES BARCUS AND DR. ROBERT BROWN, PRINCIPAL INVESTIGATORS FOR LAST SUMMER'S OPERATION.

3. SPECIFIC DETAILS OF FLIGHT AND SAFETY EQUIPMENT AND OPERATIONAL PROCEDURES ARE LISTED AS FOLLOWS:

A. BALLOONS:

SIZE: LENGTH 40 M AT LAUNCH; DIAMETER, 30 M AND VOLUME, 7000 M3 WHEN AT FLOAT ALTITUDE.

MATERIAL: THIN-GUAGE POLYETHYLENE PLASTIC FILM.

WEIGHT: NOMINALLY, 27 KG.

B. PAYLOADS:

DIMENSIONS: 0.6 X 0.4 X 0.36 M.

WEIGHT: 14 KG.

CHARACTERISTICS: CONSISTS OF LIGHT WEIGHT ELECTRONIC INSTRUMENTATION, USING SOLID STATE COMPONENTS. ENCASED IN STYROFOAM INSULATION.

SUSPENSION: ATTACHED TO THE BOTTOM OF THE EXTENDED DESCENT PARACHUTE. TOP OF THE PARACHUTE IS ATTACHED DIRECTLY TO THE BASE OF THE BALLOON.

C. INFLATION GAS: HELIUM WILL BE USED FOR ALL FLIGHTS.

D. FLIGHT PROFILE: THE TYPICAL FLIGHT WILL CONSIST OF ABOUT 2 1/2 HOURS ASCENDING TO A FLOAT ALTITUDE OF 36 KM. AFTER FLOATING AT 36 KM FOR 20 TO 36 HOURS, DEPENDING UNCLASSIFIED

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UPON WIND SPEEDS, THE FLIGHT WILL BE TERMINATED AND THE PAYLOAD WILL DESCEND TO THE SURFACE BY PARACHUTE. LANDING IS EXPECTED WITHIN A 500 KM RADIUS OF SONDRESTROM AB. ALTHOUGH THE PAYLOADS ARE CONSIDERED TO BE EXPENDABLE, EACH WILL DISPLAY A RETURN TAG. NO TRACKING OR RECOVERY AIRCRAFT WILL BE USED.

E. TERMINATION: A TIMER-ACTUATED SQUIB SYSTEM WILL

RELEASE THE PARACHUTE AND PAYLOAD, AND INITIATE DESTRUCTION OF THE BALLOON BY MEANS OF A RIP-PANEL. A SECOND, INDEPENDENT SQUIB SYSTEM IS PROVIDED FOR REDUNDANCY.

F. SAFETY DEVICES: EACH FLIGHT WILL BE EQUIPPED WITH A FLASHING RED LIGHT, WHICH WILL OPERATE DURING ASCENT AND DESCENT THROUGH AIRCRAFT ALTITUDES. IN ADDITION, EACH FLIGHT WILL HAVE RADAR REFLECTORS AFFIXED TO THE BALLOON AND PAYLOAD TO ENHANCE RADAR TRACKING.

G. RADIO FREQUENCY: 88 MHZ WILL BE USED FOR TELEMETRY.

H. FLIGHT ADVISORIES: CLASS I NOTAMS WILL BE FILED WITH THE DANISH AIR CONTROL AUTHORITIES BY WAY OF THE SONDRÉ STROMFJORD AIR RADIO. THESE WILL INCLUDE, AS REQUESTED:

PRE-LAUNCH, INCLUDING EXPECTED TIME, TRAJECTORY AND TERMINATION POSITION.

LAUNCH, UPDATED AS REQUIRED.

PRETERMINATION.

TERMINATION.

FLIGHT CLOSE-OUT.

I. ADDITIONAL INFORMATION: A DESIGNATED PERSON WILL BE AVAILABLE TO PROVIDE FURTHER INFORMATION FOR EACH FLIGHT.

4. BELOW IS A SUGGESTED TEXT TO ASSIST THE DANISH CIVIL AVIATION AUTHORITIES IN THEIR ISSUANCE OF A CLASS II NOTAM:

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-- HAZARDS TO AIR NAVIGATION

-- SCIENTIFIC BALLOON FLIGHTS - SONDRÉSTROM AB, GREENLAND

-- 15 JUNE TO 31 JULY 1976

A SERIES OF TWELVE SCIENTIFIC BALLOONS WILL BE LAUNCHED AT SONDRÉSTROM AB, GREENLAND DURING 15 JUNE TO 31 JULY 1976. 14 KG PAYLOADS WILL BE FLOWN ON THIN-GUAGE POLYETHYLENE BALLOONS HAVING AN INFLATED VOLUME OF 7000 CUBIC METERS. THE LIFTING GAS WILL BE HELIUM WHICH WILL PROVIDE A RATE OF ASCENT OF ABOUT 300 METERS PER MINUTE TO A FLOAT ALTITUDE OF 36 KM. DURATIONS OF UP TO 36 HOURS AT 36 KM ARE ANTICIPATED. AT TERMINATION, PAYLOADS

WILL RETURN TO THE SURFACE BY PARACHUTE.
THE FLIGHT SYSTEMS THEMSELVES ARE HIGHLY CONSPICUOUS
DURING DAYLIGHT. DURING HOURS OF DARKNESS EACH WILL BE
MARKED BY FLASHING RED LIGHTS. EACH BALLOON AND PAYLOAD
WILL BE EQUIPPED WITH RADAR REFLECTORS.
FLIGHT ADVISORIES ARE AVAILABLE FROM SONDRESTROM RADIO.

5. EMBASSY IS REQUESTED TO PASS THE NOTAM TEXT TO THE

DANISH AUTHORITIES WITH A REQUEST THAT A CLASS II NOTAM
BE ISSUED BY THE DIRECTORATE OF AVIATION AS SOON AS IS
PRACTICABLE. THE INFORMATION IN PARA 1 THROUGH 3 OF THIS
TELEGRAM MAY ALSO BE FURNISHED TO THE DANES NOW, IN
ADVANCE OF THE REQUEST FOR PERMISSION TO CONDUCT THE
BALLOON FLIGHTS. THAT REQUEST, WITH ANY ADDITIONAL
INFORMATION NEEDED, WILL BE PRESENTED WHEN REQUESTS FOR
THE OTHER PLANNED SCIENTIFIC PROJECTS FOR 1976-77 ARE
MADE IN THE NEAR FUTURE. KISSINGER

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